



Effectiveness of Egyptian propolis on control of tomato bacterial wilt caused by *Ralstonia solanacearum*

Kamal A. M. Abo-Elyousr Mohamed E. A. Seleim Rafeek M. El-Sharkawy and Hadel M. M. Khalil

Abstract:

This study was conducted to evaluate Egyptian propolis to control tomato bacterial wilt caused by *Ralstonia solanacearum* under in vitro and in vivo conditions. In vitro, three concentrations of water extract of propolis [1 mg/mL (PC1); 10 mg/mL (PC2); and 100 mg/mL (PC3)] showed antagonistic activity against *R. solanacearum*. All concentrations significantly reduced the growth of the pathogen compared to control treatment, PC3 caused the highest growth reduction while PC1 caused the lowest reduction compared to water treatment. When the above three concentrations were applied to tomato seeds under laboratory conditions, they improved seed germination relative to control seeds treated with sterile distilled water. In both greenhouse and field experiments, PC3 gave a higher reduction in disease severity than PC1 and PC2; also this concentration caused the highest biomass percentage under greenhouse conditions. As recorded in field experiments, PC3 treatment resulted in a control efficacy of 76.9 and 71.7%, respectively, in two trial seasons. The highest increase percentage of yield per plant was recorded for PC3.

Keywords:

Propolis □ *Ralstonia solanacearum* □ Tomato □ Bacterial wilt

Published In:

Journal of Plant Diseases and Protection , Vol. 124 - No. 5 , pp. 467 - 472